
vidman.ca

INTRODUCING

The Montana Driver Education and Training Curriculum Guide

Content

- 45 Essential Knowledge and Skills
- 23 Lesson Plans
- 76 Fact Sheets
- 89+ PEPs
- 45 PowerPoints
- 51 Worksheets
- 29 Tests
- 3 Test Banks

TRAFFIC SAFETY EDUCATION
Montana Standards for Teen Driver Education and Training

Content Standard 1 – Students demonstrate knowledge and understanding of the highway transportation system and the laws governing the operation of a motor vehicle.

Content Standard 2 - Students act responsibly by consistently demonstrating a positive attitude and respect for other motorists, by obeying laws, and through an observable commitment to safe behaviors and good decision making.

Content Standard 3 - Students demonstrate skill in maneuvering and controlling motor vehicles smoothly, efficiently, and safely.

Content Standard 4 - Students demonstrate and analyze the importance of proper visual skills for the safe operation of a motor vehicle.

Content Standard 5 - Students communicate and interact with the highway transportation system and other users utilizing prescribed, effective, and safe practices.

Content Standard 6 – Students demonstrate and safely apply driver risk-managing (defensive driving) strategies, behaviors, and habits.

Content Standard 7 - Students advocate for personal and public approaches to lifelong learning of the driving task.

Content Standard 8 - Students acquire behind-the-wheel driving experience under the direction of a Montana approved driver education instructor and are encouraged to obtain additional experience under the direction of a parent or guardian with a valid driver license.

Montana

OPI Linda McCulloch, Superintendent
Montana Office of Public Instruction
www.opi.mt.gov

Scope and Sequence

Montana

OPI Linda McCulloch, Superintendent
Montana Office of Public Instruction
www.opi.mt.gov

MONTANA DRIVER EDUCATION AND TRAINING CURRICULUM GUIDE
CLASSROOM AND IN-CAR SCOPE AND SEQUENCE

Classroom Module Lessons	Behind the Wheel Lessons
Module 1: Course Overview/Parent Orientation • program registration process • teen driver education and training program goals • course structure, policies and rules • Graduated Driver Licensing Law • responsibilities of the instructor, parent and student • behaviors resulting in driver errors • crash statistics in Montana and nationally • risks associated with poor driving habits	Draft
Module 2: Preparing to Operate a Vehicle • function of alert and warning symbols, and gauges • location, function, and operation of vehicle control devices and safety, communication, and convenience devices • pre-entry tasks made around the vehicle entry into the vehicle tasks • seating, steering wheel (if adjustable), and restraint adjustments • traditional mirror adjustments • enhanced side view mirror (GBE) settings • securing and exiting tasks after stopping a motor vehicle.	
Module 3: Traffic Control Devices and Laws • needs and purpose for traffic control devices for signs, signals, and markings • color and function of traffic signal lights, and signal/sign combinations • meanings of colors and shapes of roadway signs, signals, and markings • categorize roadway signs, signals, and markings into meaningful applications • driver responses to roadway signs, signals, and markings • apply the traffic laws	
Module 4: Basic Control Tasks • blind areas to the front, sides, and rear of a vehicle • targeting establishes steering accuracy • visual reference points • pre-drive and starting tasks • four (4) steering wheel control techniques • procedures for entering and leaving the roadway • acceleration control • controlled, threshold, and trail braking control • left and right precision turns, stopped and moving • backing straight and while turning	**In-Car Lesson 1** **Environment: Parking Lot** • Preparation to Drive • Orientation to Controls/Adjustments • All Occupants Buckled Up • Starting the Vehicle • Steering Wheel Control • Putting the Vehicle into Motion • Managing Speed Control • On/Off Targeting (Vision Control) — Turn Head before Turning Wheel • Tracking on a Straight Path • Stopping Smoothly with Controlled Braking • Stopping Quickly with Threshold Braking • Securing and Exiting the Vehicle

The Table of Content

DRIVER EDUCATION AND TRAINING CURRICULUM GUIDE
TABLE OF CONTENT

The Essential Knowledge and Skills

Curriculum Map

Montana Teen Driver
Essential Knowledge and Skills Topics

Topic 1.	Course Overview/Parent Orientation
Topic 2.	Identify Vehicle Gauges, Alert & Warning Symbols
Topic 3.	Operate Vehicle Control Devices
Topic 4.	Preparing to Drive
Topic 5.	Protecting Occupants
Topic 6.	Traffic Control Devices and Traffic Laws
Topic 7.	Standard Vehicle Reference Points
Topic 8.	Performing Basic Maneuvers
Topic 9.	Using Vision for Vehicle Control
Topic 10.	Good Habits for Reduced Risk Driving
Topic 11.	Time and Space Management Systems
Topic 12.	Time and Space Management Strategies
Topic 13.	Right of Way Rules
Topic 14.	Negotiating Intersections
Topic 15.	Performing Lane Changes and Passing
Topic 16.	Performing Turnabouts
Topic 17.	Performing Parking Maneuvers
Topic 18.	Effect of Gravity and Energy of Motion
Topic 19.	Maintaining Vehicle Balance
Topic 20.	Maintaining Traction Control
Topic 21.	Negotiating Hills and Curves

#1 - 21 Foundation for Knowledge & Skills

The Essential Knowledge and Skills

Foundation for Laws, Good Habits, and Time and Space Management
#6, 7, 9, 10, 11, 12, 13

Topic 6.	Traffic Control Devices and Traffic Laws
Topic 7.	Standard Vehicle Reference Points
Topic 9.	Using Vision for Vehicle Control
Topic 10.	Good Habits for Reduced Risk Driving
Topic 11.	Time and Space Management Systems
Topic 12.	Time and Space Management Strategies
Topic 13.	Right of Way Rules

- Establishing Good Driving Habits
- Visual Functions
- Fields of Vision
- Overcoming Visual Problems
- Effect of Speed on Vision
- Techniques to Improve Vision
- Calculate Speed and Distance Traveled
- Vehicle Control Sequence
- Use Following Time to Manage Space

- Signs, Signals, Markings
- Rules of the Road and Traffic Laws
- Right of Way

- Space Management Strategies
- The Perceptual Process
- Components
  - LOS-POT
  - Orderly Visual Search Pattern
  - Lane Positions
  - Zone Locations
  - Controlling Space to Front
  - Judging Gaps
  - Rear Zone Control
  - Judging gaps
- Reduced Risk Decision-Making

The Essential Knowledge and Skills

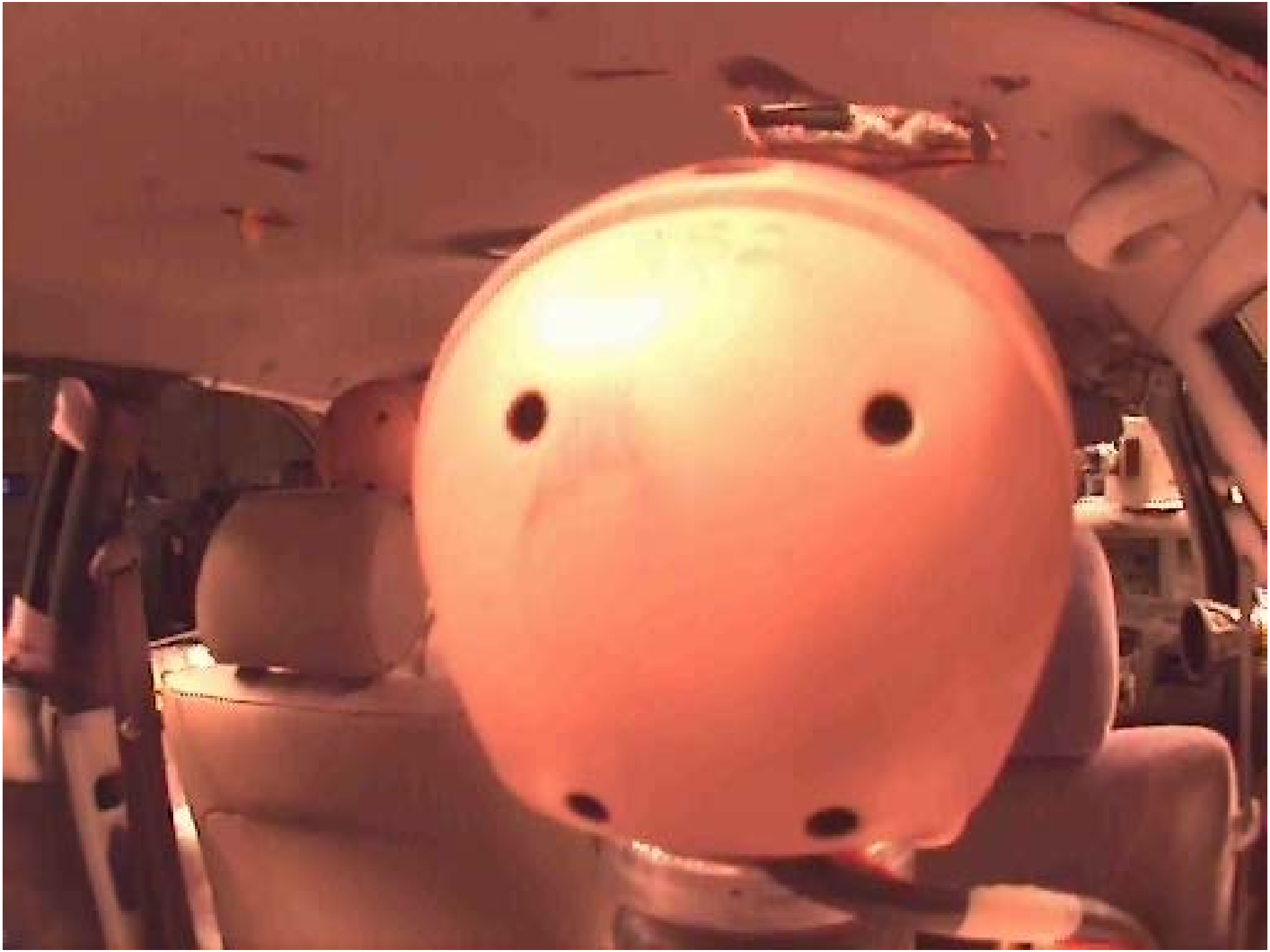
Topic 22.	Driving in Rural Environments	**#22-26 Application Of Knowledge & Skills**
Topic 23.	Driving in Urban Driving Environments	
Topic 24.	Driving on Controlled, Access Highways	
Topic 25.	Driving During Reduced Visibility Driving Conditions	
Topic 26.	Driving During Extreme Weather Conditions	
Topic 27.	Cooperating with Other Roadway Users	**#27-39 Responsibility & Attitude**
Topic 28.	Responding to Emergencies	
Topic 29.	Responsibilities After a Collision	
Topic 30.	Effects of Emotions and Disabilities	
Topic 31.	Alcohol and Drugs' Effect on the Body	
Topic 32.	Alcohol and Drugs' Effect on the Driving Task	
Topic 33.	Saying "No" to Alcohol and Other Drugs	
Topic 34.	Alcohol Involved Crashes and Montana Laws	
Topic 35.	Preventing Drowsy Driving	
Topic 36.	Preventing Aggressive Driving	
Topic 37.	Reducing Driver Distractions	
Topic 38.	Driving Within the Highway Transportation System	
Topic 39.	Driver Licensing	
Topic 40.	Insurance Requirements	**#40-45 Program Enhancements**
Topic 40.	Purchasing a Vehicle	
Topic 41.	Maintaining a Vehicle	
Topic 43.	Planning a Trip	
Topic 44.	Conserving Resources	
Topic 45.	Managing Risk with Vehicle and Highway Designs	

The Essential Knowledge and Skills Lessons' Topics

Modules	Topics Included in Module	Reinforced Topics	Topic Content
			positioning within a vehicle and how they provide crash survival protection; and (d) demonstrate proper steering wheel adjustments to accommodate for airbags.
Module 10 Strategies for Negotiating Hills and Curves	21	3,5, 6, 7, 8, 9, 10, 11, 12	21. The student is expected to: (a) describe and respond to line of sight and path of travel restrictions; (b) describe and demonstrate proper approach to hills or curves; (c) describe and demonstrate proper speed for ascending and descending hills; (d) describe and demonstrate proper entry speed and lane positions for a hill or curves; (e) describe and demonstrate proper speed and lane positions in a curves' apex; (f) demonstrate proper speed and lane positions for exiting curves; and (g) describes conditions that can affect traction and procedures to maintain traction in curves.

Extra Resources

Name	Size	Type
Photo Airbag Deployment		File Folder
Test Bank		File Folder
Driving Reminder Cards.pdf	87 KB	Adobe Acrobat Document
IIHS News Release_Rear Crash Protection .pdf	199 KB	Adobe Acrobat Document
M18 PP Vehicle Technology Optional.pdf	2,944 KB	Adobe Acrobat Document
MT Crash Release form.pdf	55 KB	Adobe Acrobat Document
MT GLD law.pdf	57 KB	Adobe Acrobat Document
Mt Highway Patrol AnnualReport 2004.pdf	2,288 KB	Adobe Acrobat Document
MT Highway Patrol brochure.pdf	427 KB	Adobe Acrobat Document
NHTSA alco facts.pdf	328 KB	Adobe Acrobat Document
NHTSA young driver stats.pdf	225 KB	Adobe Acrobat Document
Parent Night PP.pdf	1,111 KB	Adobe Acrobat Document
Reading Tire Information.pdf	53 KB	Adobe Acrobat Document
Understanding Car Crashes Teachers_Guide[1].pdf	807 KB	Adobe Acrobat Document
Young Drivers and Highway Design.pdf	32 KB	Adobe Acrobat Document
Driving Reminder Cards.pub	63 KB	Microsoft Office Publisher Document
Denise Wagoner's story.ppt	952 KB	Microsoft PowerPoint Presentation
M18 PP Vehicle Technology Optional.ppt	3,176 KB	Microsoft PowerPoint Presentation
Parent Night.ppt	2,571 KB	Microsoft PowerPoint Presentation
Photo Airbag Deployment.ppt	51 KB	Microsoft PowerPoint Presentation
PP Jacqueline_DUI.ppt	260 KB	Microsoft PowerPoint Presentation
DUI Laws by State.doc	99 KB	Microsoft Word Document
Web Resources.doc	45 KB	Microsoft Word Document
Websites for Mod 9.doc	24 KB	Microsoft Word Document
Wrksht Crash Log.doc	42 KB	Microsoft Word Document



GIFs


Slide1.GIF


Slide2.GIF


Slide3.GIF


Slide4.GIF


Slide5.GIF


Slide6.GIF


Slide7.GIF


Slide8.GIF


Slide9.GIF


Slide10.GIF


Slide11.GIF


Slide12.GIF


Slide13.GIF


Slide14.GIF


Slide15.GIF


Slide16.GIF


Slide17.GIF


Slide18.GIF


Slide19.GIF


Slide20.GIF


Slide21.GIF


Slide22.GIF


Slide23.GIF


Slide24.GIF


Slide25.GIF


Slide26.GIF


Slide27.GIF


Slide28.GIF


Slide29.GIF


Slide30.GIF


Slide31.GIF


Slide32.GIF


Slide33.GIF


Slide34.GIF


Slide35.GIF


Slide36.GIF


Slide37.GIF


Slide38.GIF


Slide39.GIF


Slide40.GIF

THE ULTIMATE VEHICLE OVER LOAD

- Operating a vehicle above the Gross Vehicle Weight Rating (GVWR) is a potential safety hazard

Frame, suspension, brakes and tires are not designed for weights above the rating the manufacturer has set

Videos


Airbag deploy..mpg
AMBUSH.WMV
american julie.mpg
backseat bullet.avi
backseat unbelted.avi
bikerbar.mpg
Bird.mpeg
Blondestar2004.mp3
BungeeJumping_1.mpg
bus.mpeg
Car hits Man.MPG.mpg
car.crash.umc.mpeg
cashCrash.mpeg
child unbelted.avi
Crash Dummies.avi
Crash spirits.asf
crash test.avi
D.03 Road Rage.wmv
D.04 Dialing and Driving_0001.wmv
D.05 Drag Racing Dangers 01_LOV2XLR8.wmv
D.06 Organ Donor Share Your Life Share Your Decision.wmv
Drowsy_unbelted.avi
dualdriving.mpeg
Elephant crash.mpg
experiencing_esc.mpg
female parking.wmv
fire graphic.gif
FREE_PARKING.MPG
front all belted.avi
front view all belted.avi
front view back unbeltedt.avi
funny cats.wmv
Goal.mpeg
HAND TO HAND.MPG
HELMET.MPG
I believe in Mericles.mpg
infant[1].mpg
into_a_tree_e0.gif
michael bullet.mpeg
Monkey in a trunk.wmv
obstacle_avoidance.mpg
oversteer.mpg
paddle_e0.gif
Parallel parking.mp2
parallel PARKING.mpg
Parking lot rage.wmv
pinguin1.mpg
pizzacrash.mpg
pretty girl.wmv
RadioPrank.asf
rear view unbelted.avi
Robot car.mpeg
Rollover thrown from car.wmv
RR crossing graphic.gif
side crash unbelted.avi
Side Impact..mpg
side view back unbelted.avi
SpeedShattersLife.avi
stupid rider.mpeg
TrafficStopCrash.mpg
TrunkMonkey1.wmv
understeer.mpg
web source funnies.doc

Parking Video

Module Folders Content

Name	Size	Type
M11 A LP Rural Driving.pdf	845 KB	Adobe Acrobat Document
M11 Fact Crashes with Wild Animals.pdf	105 KB	Adobe Acrobat Document
M11 Fact Dirt Roads.pdf	262 KB	Adobe Acrobat Document
M11 Fact Farm Equipment.pdf	238 KB	Adobe Acrobat Document
M11 Fact Rural Road Safety.pdf	43 KB	Adobe Acrobat Document
M11 PEP Rural Roads.pdf	52 KB	Adobe Acrobat Document
M11 PEP Searching Rural.pdf	171 KB	Adobe Acrobat Document
M11 PEP Searching_Los Pot.pdf	49 KB	Adobe Acrobat Document
M11 PP Rural Driving.pdf	3,484 KB	Adobe Acrobat Document
M11 Test_Answer key.pdf	29 KB	Adobe Acrobat Document
M11 Wrksht Animals.pdf	122 KB	Adobe Acrobat Document
M11 Wrksht Rural Roads.pdf	127 KB	Adobe Acrobat Document
M11 PP Rural Driving.ppt	29,66...	Microsoft PowerPoint Presentation
M11 PEP Rural Roads.doc	32 KB	Microsoft Word Document
M11 PEP Searching Rural.doc	264 KB	Microsoft Word Document
M11 PEP Searching_Los Pot.doc	31 KB	Microsoft Word Document
M11 Test_Answer key.doc	48 KB	Microsoft Word Document
M11 WrkSht Animals.doc	895 KB	Microsoft Word Document
M11 Wrksht Rural Roads.doc	74 KB	Microsoft Word Document

LESSON PLAN

The cover of each lesson plan identifies the Essential Knowledge and Skill included in the lesson along with a list of the topics.

MONTANA DRIVER EDUCATION AND TRAINING CURRICULUM GUIDE

Module 11 Lesson Plan

Strategies for Rural Driving

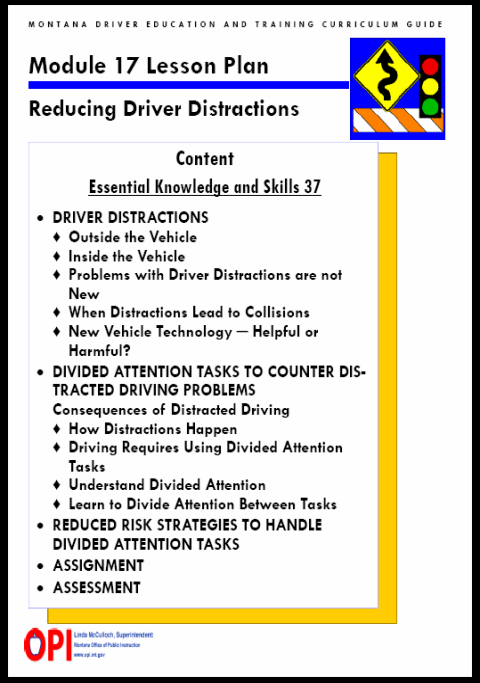
Content

Essential Knowledge and Skills 22

- Crash Statistics
- Rural Road Characteristics
- Time and Space Management Strategies
- Driving on Two-Lane Roads
- Driving on Multi-Lane Roads
- Passing and Being Passed
- Highway Hypnosis
- Slow Moving Vehicles
- Night Driving
- Rural Railroad Crossings
- Animals
- Assignment
- Assessment

OPI Linda McCulloch, Superintendent
Montana Office of Public Instruction
www.opi.mt.gov

Module 17
4 Lesson Plans


MONTANA DRIVER EDUCATION AND TRAINING CURRICULUM GUIDE

Module 17 Lesson Plan

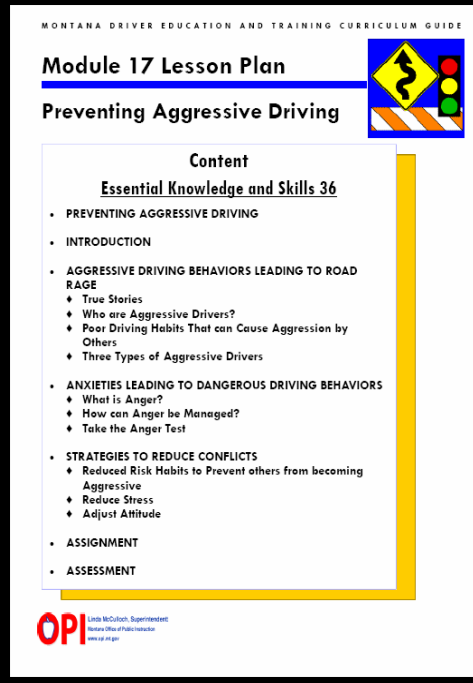
Reducing Driver Distractions

Content

Essential Knowledge and Skills 37

- DRIVER DISTRACTIONS
  - Outside the Vehicle
  - Inside the Vehicle
  - Problems with Driver Distractions are not New
  - When Distractions Lead to Collisions
  - New Vehicle Technology — Helpful or Harmful?
- DIVIDED ATTENTION TASKS TO COUNTER DISTRACTED DRIVING PROBLEMS
  Consequences of Distracted Driving
  - How Distractions Happen
  - Driving Requires Using Divided Attention Tasks
  - Understand Divided Attention
  - Learn to Divide Attention Between Tasks
- REDUCED RISK STRATEGIES TO HANDLE DIVIDED ATTENTION TASKS
- ASSIGNMENT
- ASSESSMENT

OPI Linda McCulloch, Superintendent Montana Office of Public Instruction www.opi.mt.gov


MONTANA DRIVER EDUCATION AND TRAINING CURRICULUM GUIDE

Module 17 Lesson Plan

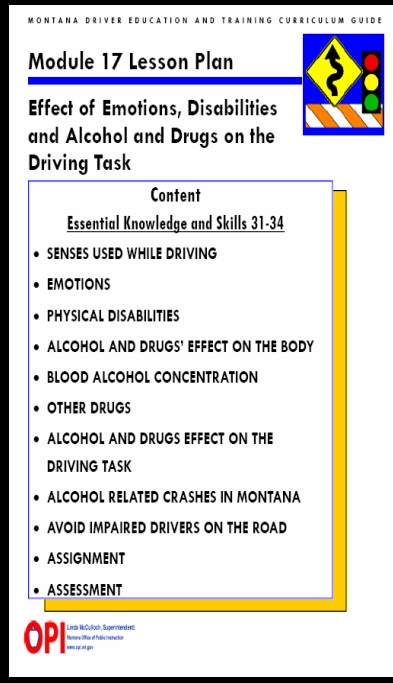
Preventing Aggressive Driving

Content

Essential Knowledge and Skills 36

- PREVENTING AGGRESSIVE DRIVING
- INTRODUCTION
- AGGRESSIVE DRIVING BEHAVIORS LEADING TO ROAD RAGE
  - True Stories
  - Who are Aggressive Drivers?
  - Poor Driving Habits That can Cause Aggression by Others
  - Three Types of Aggressive Drivers
- ANXIETIES LEADING TO DANGEROUS DRIVING BEHAVIORS
  - What is Anger?
  - How can Anger be Managed?
  - Take the Anger Test
- STRATEGIES TO REDUCE CONFLICTS
  - Reduced Risk Habits to Prevent others from becoming Aggressive
  - Reduce Stress
  - Adjust Attitude
- ASSIGNMENT
- ASSESSMENT

OPI Linda McCulloch, Superintendent Montana Office of Public Instruction www.opi.mt.gov


MONTANA DRIVER EDUCATION AND TRAINING CURRICULUM GUIDE

Module 17 Lesson Plan

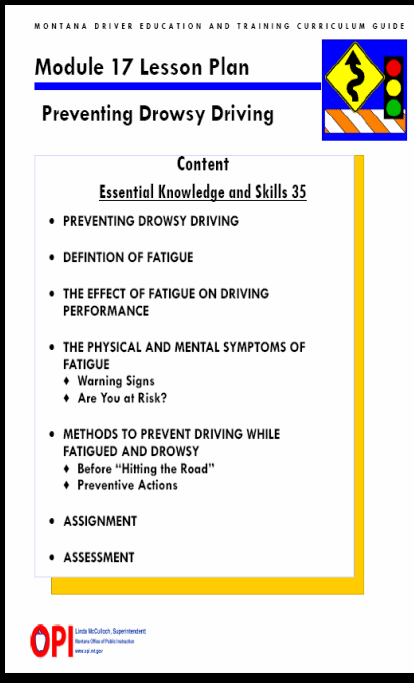
Effect of Emotions, Disabilities and Alcohol and Drugs on the Driving Task

Content

Essential Knowledge and Skills 31-34

- SENSES USED WHILE DRIVING
- EMOTIONS
- PHYSICAL DISABILITIES
- ALCOHOL AND DRUGS' EFFECT ON THE BODY
- BLOOD ALCOHOL CONCENTRATION
- OTHER DRUGS
- ALCOHOL AND DRUGS EFFECT ON THE DRIVING TASK
- ALCOHOL RELATED CRASHES IN MONTANA
- AVOID IMPAIRED DRIVERS ON THE ROAD
- ASSIGNMENT
- ASSESSMENT

OPI Linda McCulloch, Superintendent Montana Office of Public Instruction www.opi.mt.gov


MONTANA DRIVER EDUCATION AND TRAINING CURRICULUM GUIDE

Module 17 Lesson Plan

Preventing Drowsy Driving

Content

Essential Knowledge and Skills 35

- PREVENTING DROWSY DRIVING
- DEFINTION OF FATIGUE
- THE EFFECT OF FATIGUE ON DRIVING PERFORMANCE
- THE PHYSICAL AND MENTAL SYMPTOMS OF FATIGUE
  - Warning Signs
  - Are You at Risk?
- METHODS TO PREVENT DRIVING WHILE FATIGUED AND DROWSY
  - Before "Hitting the Road"
  - Preventive Actions
- ASSIGNMENT
- ASSESSMENT

OPI Linda McCulloch, Superintendent Montana Office of Public Instruction www.opi.mt.gov

Instructional Topic	Content	Slide
◆ Sleep-Related Crash Statistics (Cont.)	When we don't get adequate sleep, we accumulate a sleep debt that can be difficult to "pay back" if it becomes too big • Sleep experts say most adults need between seven and nine hours of sleep each night for optimum performance, health and safety • The resulting sleep deprivation has been linked to health problems such as obesity and high blood pressure, negative mood and behavior, decreased productivity, and safety issues in the home, on the job, and on the road	T17-12
THE PHYSICAL AND MENTAL SYMPTOMS OF FATIGUE ◆ Warning Signs	Warning Signs • Your eyelids feel heavy and your head starts to nod • Yawning becomes almost constant and your vision seems blurry • Constant rubbing of your eyes • Trouble remembering the last few miles driven; missing exits or traffic signs • Daydreaming, wandering, disconnected thoughts • Trouble keeping your head up • Drifting from your lane, tailgating, or hitting a shoulder rumble strip • Feeling restless and irritable • Blinking hard, focusing your eyes and suddenly realizing that you veered onto the shoulder or into oncoming traffic for a moment and quickly straighten the wheel ..... This time you were lucky; next time you could become the latest victim of the tragedy of drowsy driving	T17-13 T17-14
◆ Are You at Risk?	Are You at Risk? Before you drive, check to see if you are: • sleep-deprived or fatigued (6 hours of sleep or less triples your risk), • been awake for more than 20 hours, • suffering from sleep loss (insomnia), poor quality sleep, or a sleep debt, • driving long distances without proper rest breaks, • driving through the night, mid-afternoon or when you would normally be asleep, • taking sedating medications (antidepressants, cold tablets, antihistamines), • working more than 60 hours a week (increases your risk by 40%), • working more than one job and your main job involves shift work, and • driving alone or on a long, rural, dark or boring road. Drivers with any of these symptoms are at a higher risk of having a drowsy-driving crash, even they don't feel sleepy • Half the drivers who had drowsy-driving crashes said they felt "only slightly sleepy" or "not at all sleepy" right before the crash	T17-15 T17-16 T17-17

Student Learning Activities	Resources

M17

1

Module 2—Preparing to Operate a Vehicle

2

Lesson Objective: The student will describe and demonstrate procedures for: approaching, entering, and adjusting vehicle tasks; locating and operating vehicle control devices; locating and operating communication, comfort and convenience devices; identifying instrument panel content; securing and exiting the vehicle.

Instructional Topic	Content (5)	Slide (6)
3 APPROACHING, ENTERING, AND ADJUSTING VEHICLE TASKS	Introduce, model, practice and discuss	
	Awareness of oncoming traffic	T 2-0
	• From curbside approach from front of vehicle	
	• In parking lot approach from rear	T 2-1
◆ Approaching	Upon arrival	
	• With keys in hand, walk around and check:	T 2-2
	..... objects in your path	
	..... small children or pets near vehicle	
	fluid leaks	
	..... tire inflation/direction tires facing	
	..... body damage	
	..... lights are clean	
	..... inside for unwanted passengers	
	• Store valuables, packages, books in the trunk	T 2-3
4 ◆ Entering	Check traffic, unlock, open door and enter quickly	
	• Check door swing	T 2-4
	• Lock all doors	
	..... review automatic, manual, child safety locks	
	..... check passengers for safe entry	
	• Place key in the ignition—right side of steering column	
	..... some keys are different for trunk/door lock and ignition switch	
◆ Adjusting Seat	Introduce, model, practice and discuss	
	Seat adjustments usually located at lower front or left side of driver's seat	
	• Manual lever adjustment usually at lower front	
	• Electronic adjustments usually left side of driver's seat or to left on door panel	T 2-5
	• Seat back adjustment to the left near junction of backrest to seat	

The left-side page contains the lesson objectives and detailed information on what to cover.

1 Module Number and Name

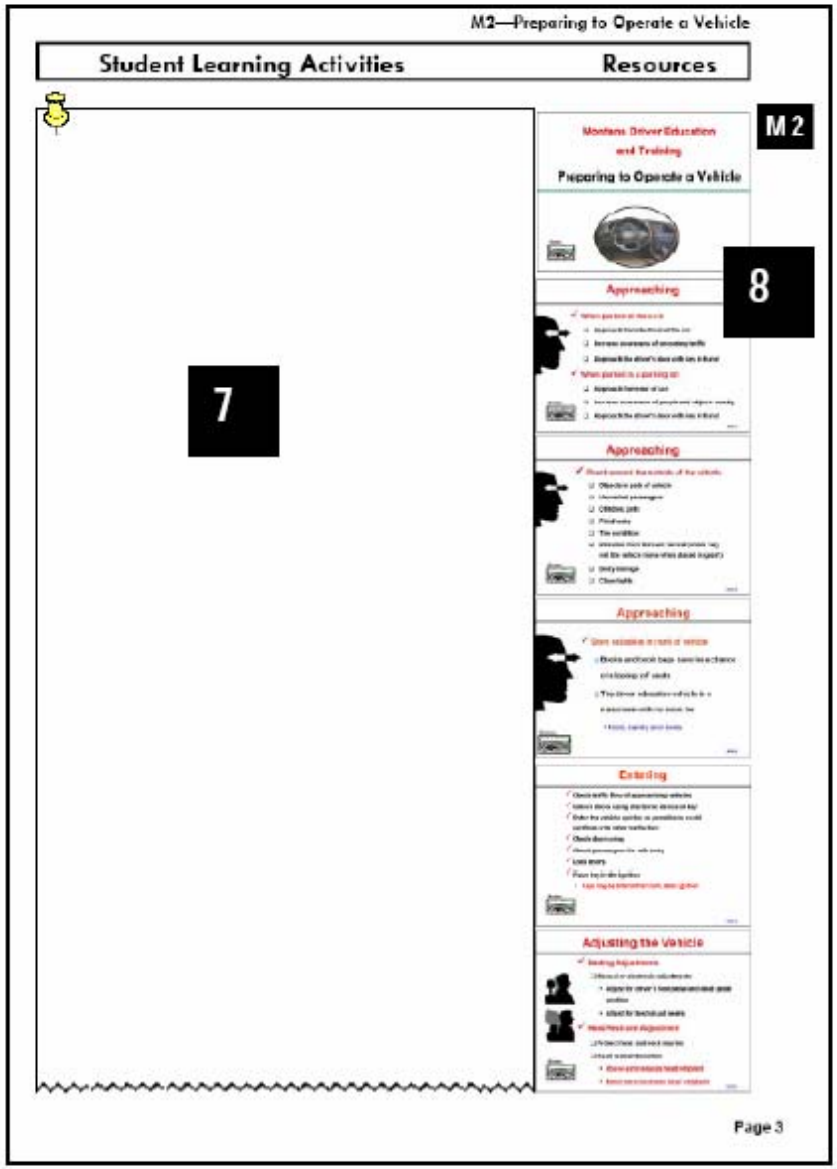
2 Lesson Objectives
Prepare students to learn by stating the lesson objectives.

3 Lesson Guide
Each **bold** text box initiates a new topic for an essential knowledge, skill, and/or attitude to be presented, and matches the Content listed on the Module Title Page.

4 Sub-Topics
Diamond graphic shows lesson guide sub-topics.

5 Content Details
Details on content knowledge and skills with step-by-step guides for the Lesson Guide Topic.

6 Slides
Identifies PowerPoint (or Transparency) number to sample slide on right side page. Add your videos/CDs to the lesson plan.



The right-side page is for the teacher to personalize the lesson plans. Record the learning activities, PEPs, review questions, worksheets to be used, cross-reference to other lessons, driving rules of the road from Module 3, handouts, textbook page numbers, etc.

7 **Student Learning Activities**
For teacher's use to prepare the lesson and activities.

8 **Resources**
Miniature copies of the PowerPoint files for this lesson for a quick-reference and preparation.

Fact Sheets

Montana

Linda McCulloch, Superintendent
Montana Office of Public Instruction
www.opi.mt.gov

FACT SHEET

Module 9 **Drivers Can Affect Vehicle Balance**

A driver uses the feeling of motion consistently to judge acceleration, deceleration, and loss of traction. The only other sense used more to operate a vehicle safely is vision.

Vehicle balance refers to the distribution of the weight of the vehicle on the tires as they meet the ground. This down force of the tire patch to the roadway is affected by tire pressure and the suspension geometry. The ideal tire patch size and balance for a vehicle is only reached when the vehicle is still. As soon as motion occurs, changes to the vehicle balance or weight on the tire patches changes. Acceleration, deceleration, cornering, or a combination of these actions causes a transfer of weight from one point of the vehicle to another. If there is no acceleration or deceleration, the vehicle is traveling at a constant speed or stopped, the suspension is set on center and the steering and traction condition is considered to be in balance.

Maintaining Vehicle Balance

Maintaining vehicle balance results from:

- steering wheel balance;
- body position which allows the feet, legs, arms and hands to maintain a stable seat position to obtain a feeling of vehicle movement (kinesthetic feedback); and
- balance maintained through precise movements of steering, smooth and progressive acceleration, and controlled brake application.

Maintaining vehicle balance results from the driver's reaction to the vehicle's suspension set and its center of weight transfer. Basically the weight of a vehicle can be concentrated on one of five points on the chassis:

- the front of the chassis (over the front tire patches),
- the rear of the chassis (over the rear tire patches),
- the center of the chassis (distributed equally over the front and rear tire patches) based on speed changes,
- to the right of center (right two tire patches), or
- the left of center (left two tire patches) based on steering or surface changes.

The magnitude of these weight changes and the driver's ability to maintain control of the vehicle is influenced by the rate of acceleration, brake application, steering input, surface traction, or combinations of these factors.

When driving newer model cars, the distance the steering wheel must be moved to perform most maneuvers is substantially less than was required with most cars during the 1980s and many models in the early 1990s. The number of steering wheel turns to move the tires lock to lock, has in most cases been reduced from four to five turns to two to three turns. The lock-to-lock configuration reduction is a result of smaller steering wheel sizes and rack and pinion steering geometry changes.

Steering too quickly in combination with sudden brake application may have contributed to crashes when a driver loses control and leaves the roadway, often in a roll-over. The use of hand-over-hand steering is limited and hand-to-hand (push-pull) steering is now preferred. When moving at slow speeds with limited line of sight vision, such as perpendicular parking, or during very fast action, such as traction loss recovery, hand-over-hand is still recommended. Since drivers operate different types of vehicles, it is important to know all four steering wheel control maneuvers.

Seating Position

In order to establish vehicle balance and improve visual searching, drivers need to sit in a comfortable, erect position squarely behind the steering wheel. Adjust seat height so that the top of the steering wheel is in line with

Tests with Answer Keys

Montana

OPI Linda McCulloch, Superintendent
Montana Office of Public Instruction
www.opi.mt.gov

MONTANA DRIVER EDUCATION AND TRAINING

TEST

Module 9 Natural Laws Affecting Vehicle Control

Date_____

Name_____ Score_____

Select the best answer and place the appropriate letter (A, B, C, or D) on the answer sheet provided.

1. Three factors that determine force of impact are
   a. speed, weight, and distance between impact and stopping.
   b. traction, brakes, and steering.
   c. tire tread, visibility, and four-wheel drive.
   d. shock absorbers, tire pressure, and roadway surface.

2. The force that pulls objects toward the center of the earth is
   a. gravity.
   b. energy of motion.
   c. kinetic energy.
   d. inertia.

3. A vehicle going uphill works
   a. with the force of gravity.
   b. against the force of gravity.
   c. against inertia.
   d. with inertia.

4. Energy of motion is another way of expressing
   a. kinetic energy.
   b. effect of wind on vehicle control.
   c. mileage rating of a vehicle.
   d. the way vehicle bodies are designed.

5. A vehicle driven into a curve tends to
   a. go in a straight line.
   b. store energy of motion.
   c. increase speed.
   d. increase traction.

6. High energy of motion may cause a vehicle to
   a. go around a tight curve successfully.
   b. lose traction in a tight curve.
   c. bank a curve.
   d. maintain good traction in a tight curve.

7. All-wheel drive means
   a. power is supplied to four wheels.
   b. all four tires are inflated properly.
   c. traction is reduced.
   d. power is in the front tires only.

8. If a tire is under-inflated, the only part that grips the road well is the
   a. center of the tire tread.
   b. outside edges of the tire tread.
   c. tire cords.
   d. wear bar.

9. Because of its energy of motion, when a vehicle's speed doubles, the vehicle needs about
   a. twice the distance to stop.
   b. half the distance to stop.
   c. one-fourth the distance to stop.
   d. four times the distance to stop.

10. One way to reduce the effects of inertia in a car is by
    a. wearing seat belts.
    b. using chains.
    c. using studded tires.
    d. braking hard.

11. The center of gravity of a vehicle is that point
    a. around which all weight is evenly balanced.
    b. that is farthest from the ground.
    c. near the front bumper.
    d. about three feet under the roadway surface.

Final Test Analysis

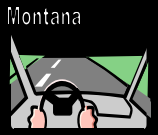
FINAL KNOWLEDGE TEST

	Total: 75 Test Questions	% Weight	# of questions
Module 1	Course Overview/Parent Orientation	0	0
Module 2	Preparing to Operate a Vehicle	5%	4
Module 3	Traffic Control Devices and Laws	5%	4
Module 4	Basic Control Tasks	7%	5
Module 5	Strategies for Effective Vision Control	5%	4
Module 6	Strategies for Managing Time and Space	6%	5
Module 7	Strategies for Mixing with Traffic	8%	6
Module 8	Vehicle Control in Limited Spaces	5%	4
Module 9	Natural Laws Affecting Vehicle Control	7%	5
Module 10	Strategies for Negotiating Hills and Curves	7%	5
Module 11	Strategies for Rural Driving	4%	3
Module 12	Strategies for Urban Driving	4%	3
Module 13	Strategies for Controlled Access Highways	4%	3
Module 14	Strategies for Adverse Conditions	5%	4
Module 15	Strategies for Sharing the Road with Other Users	5%	4
Module 16	Strategies for Emergencies	5%	4
Module 17	Driver Fitness and Responsibilities	9%	7
Module 18	Owning a Vehicle and Trip Planning	0	0
Module 19	Using Vehicle and Roadway designs to Manage Risk	0	0
Module 20	Driver Licensing and Final Assessment	7%	5
	TOTAL QUESTION	98%	75

Montana

OPI Linda McCulloch, Superintendent
Montana Office of Public Instruction
www.opi.mt.gov

Final Test Bank 377 Questions



OPI Linda McCulloch, Superintendent
Montana Office of Public Instruction
www.opi.mt.gov

MONTANA DRIVER EDUCATION AND TRAINING

Test Bank

Module 20 Final Comprehensive Test Bank

Test questions organized by Essential Knowledge and Skills.

Topic 1. Course Overview and Parent Orientation.

This course identified the responsibilities and role of the teacher, parents and student.
___**True**
___False

The Montana Traffic Education Program topics include
A. laws for operating a vehicle.
B. procedures for operating and owning a vehicle.
C. using a space management system.
D. **All the above.**

Topic 2. Identifying Vehicle Gauges, Alert and Warning Symbols.
The student distinguishes between vehicle alert and warning symbols, and gauges displayed on the dashboard.

A tachometer indicates
A. engine speed.
B. oil pressure.
C. the speed the vehicle is traveling.
D. keeps track of the number of miles traveled.

The brake system warning light serves to
A. remind drivers to release the parking brake before moving.
B. let the driver know the system is not working properly.
C. will remain on while driving, then flash if there is a problem.
D. Both A and B are correct.

Worksheets most have Answer Keys

Montana

OPI Linda McCulloch, Superintendent
Montana Office of Public Instruction
www.opi.mt.gov

MONTANA DRIVER EDUCATION AND TRAINING

WORK SHEET

Module 9 Calculating Braking Distances

Name_____ Date_____

Score_____

Feet Per Second Calculation
One mile = 5, 280 feet
One hour = 3,600 seconds 5,280 ÷ 3,600 = 1.46666 feet (1.467) per second a vehicle will travel

Use 1.467 feet/sec to calculate distance traveled for all speeds
Example: 40 mph X 1.467 = 59 feet per second traveled at 40 mph

Simplified method not as accurate, but close:
Speed ÷ 2 = a number, + speed = feet per second traveled
Example: 40 mph ÷ 2 = 20 + 40 mph = 60 feet per second traveled at 40 mph

Reaction Time Distance Calculation
Average reaction time is 3/4 of a second (.75) (driver is alert and ready to react)

To calculate reaction time distance:
speed X feet per second traveled X .75 (reaction time) = feet traveled during reaction time

Example: 40 mph X 1.467 x .75 = 44 feet traveled during reaction time
Example: 40 mph ÷ 2 = 20 + 40 mph = 60 X .75= 45 feet traveled during reaction time

Braking Distance Calculation
Speed X Speed ÷ 10 ÷ 2 = Average Braking Distance

Example: 40 mph X 40 mph ÷ 10 ÷ 2 = 80 feet to stop at 40 mph

Total Stopping Distance
Reaction Time (speed X 1.467 X .75) + Braking Distance (Speed X Speed ÷ 10 ÷ 2) = Average Stopping Distance

Example: 40 X 1.467 X .75) + ((40 X40 ÷ 10 ÷ 2) =
44 + 80 = 124 feet Average Stopping Distance

GDL Worksheet

Montana

OPI Linda McCulloch, Superintendent
Montana Office of Public Instruction
www.opi.mt.gov

MONTANA PARENT/GUARDIAN – TEEN DRIVER VEHICLE USE AND OPERATION AGREEMENT

We, _____ hereby enter into an agreement covering the use and operation of any vehicle used by _____

YOU WILL BE REQUIRED TO PAY FOR THE FOLLOWING: (Write in percent desired)

_____ Cost of vehicle
_____ Cost of fuel
_____ Damage due to abuse
_____ Under-age-25 insurance costs
_____ Collision damage
_____ Costs due to driving record
_____ Vehicle registration
_____ Maintenance costs
_____ Full insurance coverage
_____ Fines and penalties
_____ Under-B-average insurance costs
_____

YOU WILL BE RESPONSIBLE FOR THE FOLLOWING:

_____ Check fluids each fuel fill
_____ Report unusual performance
_____ Report when fuel is less than 1/4 tank
_____ Wash and wax vehicle
_____ Have maintenance done
_____ Inspect and check tire pressure
_____ Clear or clean all windows
_____ Do normal maintenance
_____ Keep interior clean

YOUR USER PRIVILEGE WILL BE LINKED TO YOUR GRADES IN SCHOOL AND PERFORMANCE AT HOME

_____ Doing duties at home properly and on time
_____ Showing proper respect for parents and others
_____ Complying with family regulations
_____ Attendance, conduct and effort at school

WRITE IN THE MAXIMUM NUMBER OF MILES AND THE MAXIMUM NUMBER OF TIMES YOU MAY DRIVE PER WEEK (Related to grades)

Grades:

A	_____ Miles per week	_____ Times per week
B	_____ Miles per week	_____ Times per week
C	_____ Miles per week	_____ Times per week
D	_____ Miles per week	_____ Times per week
F	_____ Miles per week	_____ Times per week

YOU WILL LOSE YOUR USER PRIVILEGE THESE NUMBER OF DAYS FOR EACH TRAFFIC OFFENSE OR PREVENTABLE CRASH:

First Offense	_____ days	Preventable crash	_____ days
Second Offense	_____ days	Moving violation	_____ days
Third Offense	_____ days	Drugs or alcohol	_____ days

YOU WILL BE REQUIRED TO COMPLY WITH THE FOLLOWING REGULATIONS:

_____ You will provide destination and time of return.
_____ Safety belt will be fastened at all times.
_____ Every passenger must wear a safety belt.
_____ No drugs or alcohol in the car.
_____ You may not lend the car or allow others to drive it.
_____ You will call if more than 30 minutes late.

YOU ARE LEGALLY RESPONSIBLE FOR YOUR ACTIONS AS A DRIVER.
WE, AS VEHICLE OWNERS, ARE LEGALLY LIABLE FOR DAMAGES DONE BY YOU AS A DRIVER.

Signed on the _____ day of _____, 20_____

Parent _____

Parent _____

Son/Daughter_____

In-Car

Sequence for One-Half Hour Drives

Drive One Objectives

Environment: Parking Lot

- Preparation to Drive
- Orientation to Controls/Adjustments
- All occupants buckled up
- Starting the Vehicle
- Steering Wheel Control
- Putting the Vehicle into Motion
- Managing Speed Control
- On/Off Targeting (Vision Control)
  - — Turn Head before Turning Wheel
- Tracking on a Straight Path
- Stopping Smoothly with Controlled Braking
- Stopping Quickly with Threshold Braking
- Securing and Exiting the Vehicle

Drive Two Objectives

Environment: Low Speed, Low Risk Traffic

- Locating Reference Points
- Selecting Lane Positions
- Searching Intersections
- Responding to Signs/Signals/Markings
- Entering Intersections
- Turning Right from a Stop and While Moving
- Turning Left from a Stop and While Moving
- Backing on a Straight Path
- Backing While Turning

Drive Three Objectives

Environment: Low Risk Traffic

- Responding to Traffic Signs, Signals, Markings
  - — Yielding Right of Way
  - — Selecting Where to Stop
- Searching to the Front
- Approaching & Recognizing Intersections Types
- Searching Intersections
  - — Identifies Line of Sight/Path of Travel (LOS-POT) Restrictions
- Controlling Space to the Front
  - — Judging Distance in Seconds
  - — Establishing Following Time
  - — Selecting Lane Positions
- Entering Intersections
- Changing Lanes
- Reading Instruments

Drive Four Objectives

Environment: Moderate Traffic

- Evaluating Target Path
- Searching to the Front
- Responding to LOS/POT Conditions
- Selecting Lane Positions
- Applying Speed Control
- Stopping With Vehicle in Front
- Using Staggered Stops for Space Management
- Delaying Moving for 2 Seconds
- Identifying Open/Closed Zones
- Using Share Lanes
- Passing and Being Passed

BTW Guidelines

Montana

OPI Linda McCulloch, Superintendent
Montana Office of Public Instruction
www.opi.mt.gov

BTW Lesson Plan Guidelines

Teachers should develop written lesson plans for behind-the-wheel instruction and in-car observation that reflect local driving environments. t is also important to have procedures, techniques, and route selections clearly written to avoid tort liability problems. Program administrators should have copies of the routes and lesson plans on file.

The following information will assist in developing route plans for behind-the-wheel instruction, in-car observation.

- ☐ Select a drive route appropriate to the individual lesson objectives and student-driver's ability. Be prepared with an alternate route in case of detours or other traffic problems.
- ☐ At the beginning of each session, make sure the student driver and observer understand the objectives of the lesson, and do a quick review of the preceding session.
- ☐ Be calm and patient, but alert at all times. Do not become distracted from the instructional task. The teacher must maintain the highest level of care at all times to insure the safe operation of the vehicle.
- ☐ Headlights should be used at all times.
- ☐ Mirrors should be adjusted for the student's use; not the instructor's.
- ☐ Sit so the instructor's left hand can be quickly placed on the steering wheel if necessary.
- ☐ Never leave students unsupervised in a vehicle with the motor running.
- ☐ As with any instructional setting, food and beverages must not be consumed in the vehicle.
- ☐ Read the traffic environment ahead, to the sides and behind while observing the student driver's behavior and ask the student to verbalize the need to change direction or speed.
- ☐ When giving directions, first provide students with the path of travel and then state the action to take. (At the second intersection, prepare to turn left.)
- ☐ Give directions 4 to 6 seconds before the maneuver, and always check mirrors before giving directions. (The novice driver will take more time to process information than an experienced driver.)
- ☐ Avoid the use of terms with possible double meanings. (Instead of saying "right" to indicate a correct response to a question, say "that's correct".) It may be helpful to point in the direction you want the student to go.
- ☐ Demonstrate what and how to do something to save time. (Demonstrations may be as simple as assisting with steering, using the instructor brake, using a drawing or magnetic

BTW Behaviors

In-Car Behaviors

Non-Moving Skills

Preparing to Operate
_____Approaches the vehicle with awareness
_____Checks traffic & enters and locks doors
_____Places key in ignition
_____Adjusts seat position, head restraint, steering wheel, and safety belt
_____Adjusts rearview and sideview mirrors to reduce blind areas
_____Checks all passengers are buckled up

Starting the Vehicle
_____Checks that the parking brake is set
_____Checks gear selector lever is in PARK
_____Places right foot on brake, heel on floor
_____Places left foot on "dead pedal"
_____Turns engine "on" and checks gauges, alert lights, warning lights
_____Turns key to start engine
_____Adjusts accessories as needed
_____Turns on headlights both day and night, if not automatic

Exiting and Securing the Vehicle
_____Locates safe parking location
_____Sets parking brake and shifts into PARK (or REVERSE) for standard transmission) before removing foot from brake
_____Turns off appropriate accessories; closes all windows
_____Turns off ignition, moves key to locked position; removes key
_____Visually checks for safe exit from vehicle
_____Unfastens safety belt
_____Opens door and exits quickly when safe
_____Locks doors and activates available alarm system

Vision Control

_____Identifies Target
_____Tracks on a straight path

Steering Wheel Control

_____Starts with a balanced hand position on the wheel at or below the 9 and 3 positions

Push-Pull/Hand-to-Hand Steering
_____Uses for precision maneuvers
_____Starts from a balanced hand position
_____One hand pushes, the other hand pulls
_____Hands move between 1:5 and 11:7 positions
_____Keeps hands on outside of steering wheel rim
_____Slides hands continuously and smoothly for input and stabilization

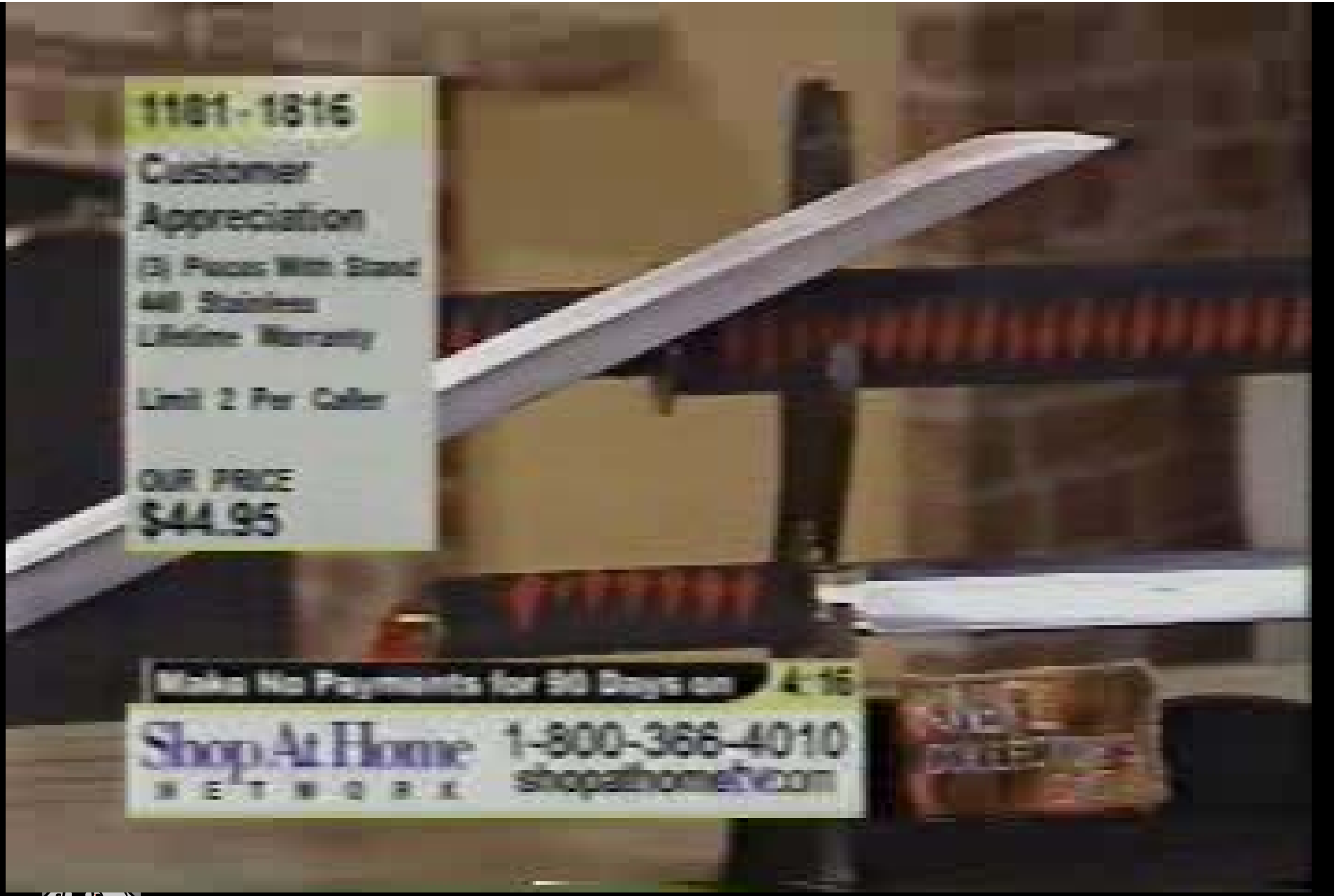
Hand-Over-Hand Steering
_____Uses when steering speed is critical and vision is limited
_____Uses the top third of the steering wheel
_____One hand pushes while the other hand pulls
_____Moves wheel continuously and quickly into turn
_____Recovers wheel smoothly and returns hands to 9:3 positions
_____Controls all movements with hands on the wheel

One Hand Steering
_____Used when backing in a straight line and parallel parking
_____Shifts hip and seating position to look out the rear and side windows
_____Places right hand on top of passenger's seat
_____Left hand grips the top of the wheel, using small adjustments in steering
_____Maintains "walking" speed while backing

Motion Control

Accelerator Control
_____Slows by releasing the accelerator pedal
_____Keeps heel on floor, pivots from brake to accelerator
_____Moves inch by inch for accelerator control practice
_____Maintains steady speed and increases to desired speed
_____Increases speed smoothly
_____Decelerates gradually

Braking Control
_____Checks rear zone prior to braking
_____Applies smooth, steady, controlled braking
_____Brings the vehicle to a smooth stop
_____Eases pressure off brake during the last two seconds of braking to reduce vehicle pitch force
_____Checks the rear zone after braking actions




source: Steve Harvey's Challenge
preview: MediaFetcher.com

Montana

OPI Linda McCulloch, Superintendent
Montana Office of Public Instruction
www.opi.mt.gov